

## **Can a Depreciation of Dollar Close US Trade Deficit?**

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*RCAPS Working Paper No. 10-2*

*November 2010*

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URL: <http://www.apu.ac.jp/rcaps/>

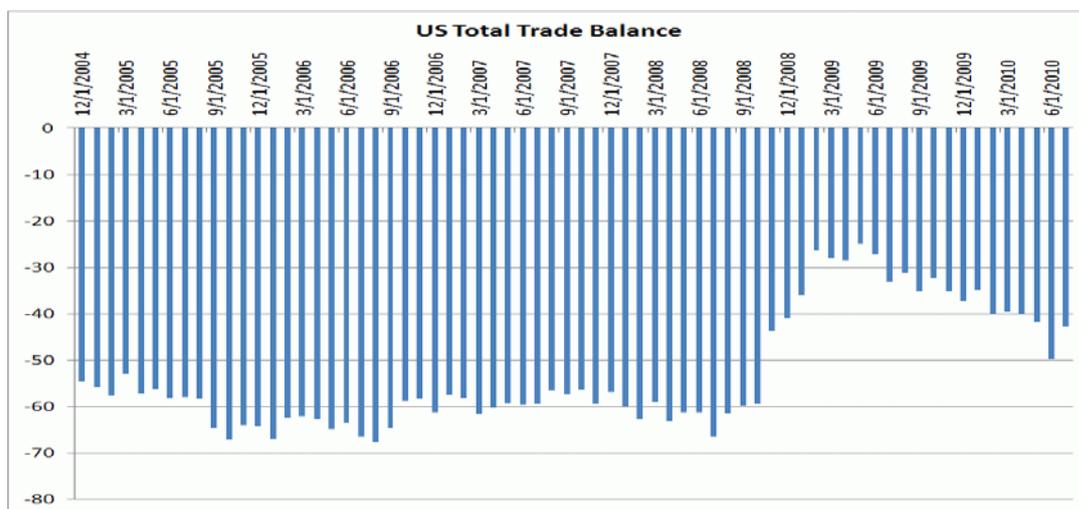
## **Can a depreciation of dollar close US trade deficit?**

Shortly after WW2, the United States had a large balance-of-trade surplus as the whole European continent relied on US exports for rebuilding purposes. But US balance of trade experienced a big change thereafter. In the year 1976, for the first time US had a negative balance of trade as the value of US imports of foreign goods has outstripped the value of US exports to other countries. Since then US trade deficit has been increasing continuously and during the mid 1980s it reached over 3 percent of GDP in the fiscal year 1985 when the dollar was devalued after the Plaza Accord. Although recent trends for US exports and imports show a substantial improvement in the values of such variables, in the past few years US trade deficit has surged to a dangerous level of as high as dollar 759 billion-or almost 6 percent of its Gross Domestic Product (GDP) in the year 2006 (chart1) .To address the issue of this export –import imbalance many analysts and policy makers prescribed a dollar depreciation mechanism with a view that such a policy tool can restore the international competitiveness of US goods. The logic behind such a claim is that if dollar is depreciated against a broad basket of currencies it will not only reduce US demand for foreign products but also increase the foreign demand for American goods by making US goods more price-competitive abroad. Having such policy goals in mind a depreciation of dollar was taken place in the past few years against major currencies like Euro, Japanese yen, and Canadian dollar etc. However, recent trade data do not show any strong evidence supporting the decisiveness of the above claims. Theoretically it is obvious that a depreciated dollar will curb the US appetite for foreign goods thus narrow the trade deficit. Yet practically the discussion includes many other factors and significant dollar depreciation may improve the situation but it is unlikely to close the gap single-handedly. To understand at what extent a dollar depreciation can contribute to the issue it is vital to have a closer look on the other factors behind the U.S trade deficit and how or which extent they are affected by a

depreciation of dollar might be an immediate concern of the policy makers. In this paper we indicate three factors that can influence the performance of an exchange rate policy reform of dollar depreciation as a means of narrowing U.S trade deficit. We argue that U.S asymmetric trade relations and policy imbalances with its trading partners, gap in import and export demand elasticities, and low terms of trade of U.S have been contributing significantly to the accumulation of US trade deficit.

Chart 1: U.S trade deficit from 2004 to 2009

Source: U.S. Department of Commerce, Bureau of Economic Analysis



This study claims that a dollar depreciation may not close the gap between US exports and imports immediately. But it can improve the situation gradually if an improvement of the above mentioned are also ensured. Historically U.S has an open market and allows foreign traders to trade their goods freely by imposing very low trade barriers. However, many of its trading partners like China, South Korea, and Malaysia always try to put some trade restrictions to confirm a safer domestic market for their producers. We argue that elimination of trade imbalances between U.S and its trading partners should be considered as a first measure. Next we found that consumption behavior of US citizen also puts a negative pressure on U.S trade deficit and a rebalanced consumption pattern or a change in demand elasticities is required. Our last suggestion is that the U.S should confirm a better terms of trade to achieve a significant

escalation in trade balance while adopting a dollar depreciation policy.

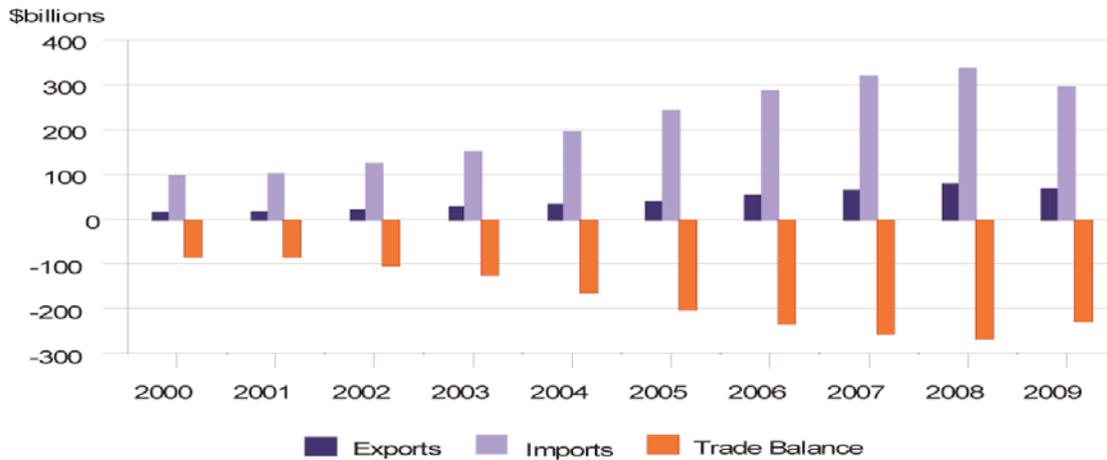
In the following sub-sections we present a broader discussion of those three factors and their consequences to U.S trade deficit. Together these three factors along with a deeper depreciation of dollar against a broader basket of currencies suggest that, we may see a sort of grater improvement in trade balance following a dollar depreciation led policy reform because of mainly a boost in U.S export revenues and a lesser aggregate demand for import expenditures. Nevertheless, if the U.S fails to maintain a depreciation of dollar against every nation's currency to which it has trade relation, then the total adjustment in its trade balance definitely fall markedly short of expectations.

## **Asymmetric trade relations and Policy imbalances**

First of all, for the previous four decades the deep, underlying asymmetries in US trade relations with its major trading partners accounted for the faster growth of US imports than its partners' purchases of US exports. This type of trade imbalance is reflected in the US trade balance and is not inconsistent in the sense that much of this deficit is due to a trade imbalance with just two Asian countries namely Japan and China. If we see real data of trading between US and China, only in 2008 US had a balance of trade deficit of dollar 266 billions with this fast growing economy (chart 2). US ships only 10% of its total exports to China and Japan while receiving more than 23% of its total imports from these two countries while China alone boosts 17% of the total US imports. Among the most dominating factors for such a huge deficit include exchange rates and unfavorable macroeconomic policies causing a temporary fluctuation of the trade balance around this trend. China is notorious in US in a sense that it is maintaining its competitive advantage in the world market by devaluing its currency continuously. Critics of such a Chinese version of exchange rate strategy argue that as a result of an artificial rate of Dollar-Yuan exchange Chinese products are cheaper than they would be in the United States

comparing with similar products produced in the domestic industry.

Chart2: US Trade with China, Source: US International Trade Commission HP



*Secondly*, the “difference in market openness” is another one important macroeconomic factor for this huge trade imbalance (Blecker, 1999). If foreign countries impose more trade barriers on their imports comparing to the US, then it is highly likely that those countries grow their purchase of US goods relatively slowly than US increase its purchase of foreign goods. For an example, many US trading partners in Asia often use overt and covert barriers such as tariffs, quotas, and other official trade restriction to safe their domestic producers. On the other hand, China which is the US biggest trading partner in Asia always try to encourage its export oriented industries by offering various government led support such as dumping, government favored industrial development policies etc. These kind of macroeconomic activities indirectly create an unfair playing field for US firms and eventually US firms loose their competitive advantage overseas. *Thirdly*, the rise of some Newly Industrialized Countries (NIC) in Asia also have emerged as a threat in terms of comparative advantage for US firms. Having a lower unit labor costs than the US, these NIC countries are in a favorable position in producing varieties of sophisticated manufactured goods like automobiles and parts, computers and other consumer electronics and in this way indirectly they are reducing US market share abroad.

## Gap in import and export demand elasticities

Accumulation of deficits in trade also depends largely on the elasticities of a nation's demand for foreign goods which is the percentage change in the quantity of a traded good demanded for a given percentage change in the price of that good. In a famous article published in 1969 Hendrik Houthakker and Stephen Magee found that maintaining relative prices of U.S. and foreign goods constant for a similar rise in national income, the US has a tendency to increase the amount of its imported goods proportionately more than its trading partners increase their purchased amount of US goods. They conclude that there is an unfavorable difference between the income elasticity of US import demand and income elasticity of US export demand. However, recent trends in US demand for imported goods and the emerging of "new economy service businesses" lead the discussion to a different verdict. We will come back to this point later.

## The low US terms of trade

A decline in US terms of trade also worsens the US balance of trade and a declining terms of trade is another dominating factor in describing US negative trade balance because a fall in the terms of trade stimulates the trade quantity ratio (ratio of real exports to imports) of the United States to fall simultaneously. According to US National Income and Product Accounts (NIPA) definition "*the terms of trade is a ratio of the deflator for the sum of exports of goods and services and of income receipts from the rest of the world to the deflator for the sum of imports of goods and services and of income payments to the rest of the world*". In other words it is a measurement toll of the relationship between the total revenue received by the US producers and the amount of payment paid to foreign exporters for US purchases. Mathematically the relation between the balance of trade and the terms of trade is- ***the trade balance = (terms of trade)( real exports/real imports)***. Using data from 1960-80, Anwar (1999) showed that a

declining terms of trade also matters reducing US trade deficit. Previous dollar depreciation initiatives taken by US Federal reserve's monetary authority also resulted in a deteriorated terms of trade and imposed an indirect unnecessary burden on the trade balance of US.

## **Does Dollar Depreciation matter ?**

After indicating the factors that are stimulating US negative trade balance our next purpose for this paper is to check whether a devaluation of dollar can reduce such deficit and by what extent such a policy is capable to address the problem. Shirvani and Wilbrat (1997) claimed that "*dollar depreciation may or may not improve the US trade balance depending upon whether the relative import elasticities conform to the Marshall-Lerner condition*". Empirical findings of Cooper (1971) also supported the similar view that depreciation of a nation's currency will shift its trade balance towards surplus only if it can fulfill the Marshall-Lerner condition, or in other words, if the combined elasticities of demand for exports and imports is *elastic* (i.e. the coefficient is greater than 1). Evidence suggests that in the US today, the Marshall-Lerner Condition is in fact being met as in the 2006 fiscal year an increase in exports of 12% in response to a 6% weakening of the dollar indicates a price elasticity of "more than one" for America's exports, meaning foreigners are highly responsive to cheaper US goods (Welker,2008). The ultimate result is that strong export is getting a boost from the cheaper dollar and consequently US trade deficit is narrowing gradually thereafter (Cahrt4, next page). Linda and Dillon (2007) took a broader look on whether a currency depreciation can be effective as a means of narrowing US trade deficits. Using three factors –invoicing practices, foreign exporters' market share concern in the United States, and high distribution costs in the US domestic market, they conclude that such a depreciation of dollar may not close the US current trade deficit as there is no strong relationship between movements in the exchange rate and US trade balance. Moreover, according to their elaborated research, there is a rather limited

effect on the trade balance and that this effect is more likely to materialize on the export side only. But our study finds a controversial explanation for such a conclusion turned by Linda and Dillon. Most recent data shows that the US trade balance gets better because of a reduction in the import side of the trade account (chart3). Evidence suggests no significant increase in US export of goods and services; rather in 2009 there was an unexpected immediate fall of US imports that leads to a decrease in trade deficit. One reason for such a behavior of the trade balance might be linked to a decreased consumption demand in the US economy caused by recent recession and perhaps a temporary appreciation of dollar in that specified period (2009: chart3) had a short-term improvement in the current account position of the United States by cutting the cost of importing goods and services.

Chart 3: U.S. total imports, exports and trade balance, Source: US International trade commission HP

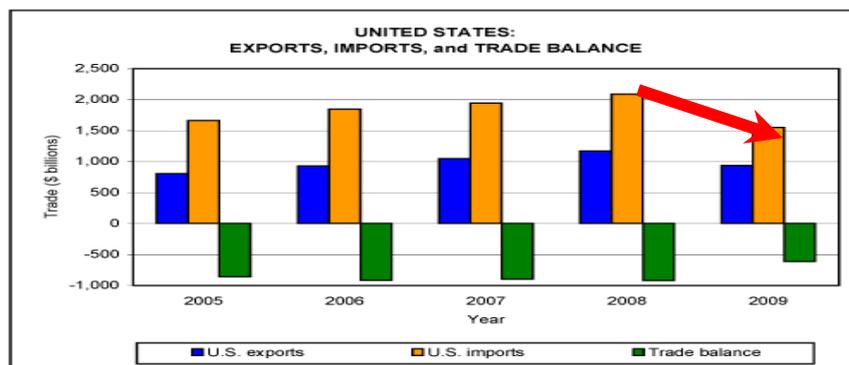
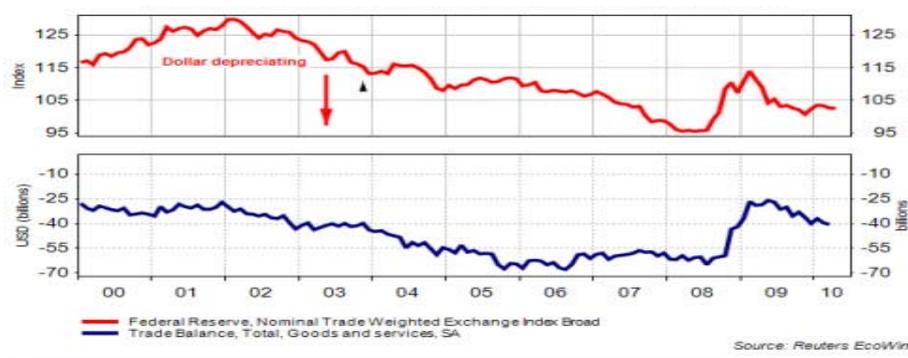


Chart4: U.S trade deficit and the US dollar, Source: Reuters EcoWin HP



On the other hand, empirical findings of Sadao Nishimura suggest a twofold influence of dollar

depreciation on US trade balance. One effect is that a deterioration of the value of dollar will increase the unit value of US imports compared with that of US exports thus further worsening the trade balance rather than improving it. This explanation is somehow related to the so-called J-curve effect which indicates that if the short run price elasticities are small, a depreciated value of dollar will deteriorate the balance of trade account in the short run. However, in the long run the rising relative price of imports over exports tend to reduce the quantity of US imports and to raise that of exports and in this way the trade balance tends to improve. Again one assumption for such an improvement is that it must satisfy the Marshall-Lerner condition. Thus, quantitative analysis of Nishimura present a mixed explanation and assert that the typical adjustment of the trade balance to a dollar depreciation will follow the J-curve effect and the improving impact will appear only after a substantial period of time. This explanation is supported by the fact that the immediate responsiveness of demand to changes in export and import prices caused by a depreciation of dollar play a prominent role in the long run than in the months immediately following a relative price change (Linda and Dillon, 2007). The reasoning goes in this way, a longer period may allow domestic producers of the US to reorient their present production mix so that they can produce commodities with lower cost which will allow greater substitution of domestic goods for imports. But Chinn (2008) observed that the empirical evidence on the J-curve is mixed. As he points out-*“I’ve done a quick (i.e., non-exhaustive) check of the U.S. data for the period from 1973-2006, in a co-integration framework. I also failed to find a distinct, robust, pattern of short-run elasticities that conforms to the J-curve effect”*. Our opinion in this regard is that the effectiveness of a dollar depreciation policy depends largely on how U.S and foreign people react for such a policy and how they change their consumption behavior after such a policy adoption. Our analysis based on recent data reveals that a demand change in US exported goods responses more proportionately than a

change in price. Using data from the 1960s to the mid-1990s, Hooper, Johnson, and Marquez (2000) estimate that a price drop of 1 percent in US exports is enough to raise quantity of demand for US exports overseas by 1.5 percent, having other things unchanged. It implies that a significant expenditure switching of US trade partners initiated by a depreciated dollar will have a positive impact on US export revenues. We also infer that relatively small reduction in demand slightly reduces US import expenditures; it is because in the US border, on the other hand, the effect of a lower pass-through transferred to the final price of an imported good is negligible. Thus, the relationship of this kind between a price movement and demand fluctuations as depicted in the chart below indicates an asymmetric impact of a dollar devaluation on US imports and exports. As indicated here a 10% dollar depreciation can boost 10% increase in US exports and cause only 1% decrease in its imports (Table 1). Thus, our analysis supports the argument “US dollar depreciation mechanism reduces the trade deficit of the US, but mainly by stimulating US exports” and such an expenditure switching behavior of foreign consumers improve US real trade balance significantly, albeit the effect on the nominal trade balance is not so impressive.

Table 1: Demand Adjustment to a 10 Percent Dollar Depreciation (Percentage Change)

	United States	Foreign Markets
Change in home currency price of bilateral imports	+4	-7
Change in bilateral demand for imports	-1	+10

Source: Linda Goldberg and Eleanor Wiske Dillon: Why a dollar depreciation may not close U.S trade deficit  
Federal Reserve Bank of New York, volume 13, Number 15, published in June 2007

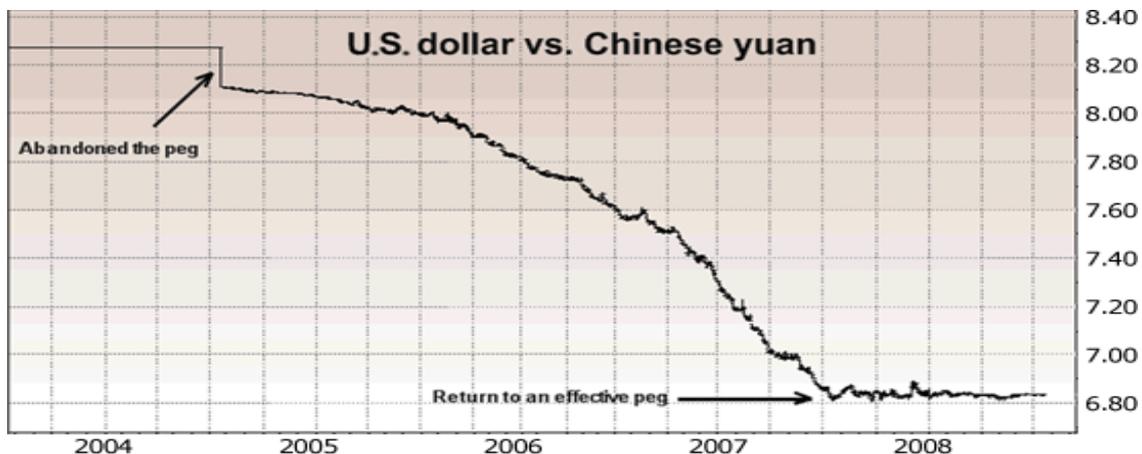
## **International pattern of adjustment and the need for a deeper and broader fall in the dollar**

One aspect that the existing literature tends to overlook when describing the impact of a

depreciation of dollar is the dependency of its effectiveness on the bilateral trade adjustment between the US and that of China. The boost in demand for US goods largely depends on the extent that the dollar has devalued against each individual nation's currency especially with Chinese Yuan. In recent years the United States dollar was depreciated mostly against a basket of strong currencies like the euro (above 20%), Canadian dollar (about 15%), Mexican peso(close to12%), and Japanese yen(almost 10%). However, the Chinese Yuan showed an asymmetric response and could maintain its value stable as the Chinese monetary authority effectively pegged their currency by holding a high foreign exchange reserve to avoid any kind of negative impact in bilateral trade from their side (Chart5). Two other fast growing economies, Malaysia and Taiwan, also actively control their currency allowing no appreciation against US dollar. As these two nations and China together represent about 30% of the entire trade deficit of the US, the ultimate result is that statistically the trade deficit of the US was adjusted very little by an ongoing dollar depreciation mechanism. Therefore, it is crucial that in order to gain a substantial improvement in their trade account the US should ensure that the value of the dollar falls especially against these three currencies of China, Taiwan, and Malaysia so that the long-term sustainability of US foreign trade position is ensured.

Chart5:U.S Dollar vs. Chinese Yuan

Source: <http://www.marketoracle.co.uk/Article12159.html> and Bloomberg HP



## **Trade in services: A ray of hope for the U.S**

Aside from the possible expected improvement of trade balance initiated by a deeper depreciation, US service industry provides another ray of hope by facilitating a further reduction in deficit as global trade in services is expected to flourish in the coming years. Being a leader in international trade of services the United States has been able to gain from the rapid growth of global service business. High international demand for new economy services, for instance in engineering documentation and IT business, in finance and insurance business, for patents, license and other similar corporate services, will show a path to U.S for a sustainable future trade balance. The following data provides evidence in the favor of such expectations. Firstly, the U.S is a very strong international player and has gained substantial growth in service businesses in the previous two decades (Table2). Since the 1980 the share of services to total U.S exports has risen 8.5 times in 2006 leading to a surplus of 80 billion U.S dollar. At the same time the miscellaneous corporate services have gained a twenty eight fold growth in the same period creating a surplus of 71 billion U.S Dollar. Secondly, by depreciating dollar value the U.S seems to decrease its service imports significantly because of the fact that the Houthakker-Magee asymmetry is completely absent in U.S service imports. In the case of merchandise, imports elasticity of US is larger than its export elasticity by 0.5% to 1%, whereas for services it is 0.25% to 0.5% lower (Mann 2004). Based upon this, some analysts estimate that the intensified growth in global service businesses, especially world wide trade of new economy services, will play a prominent role in reducing U.S trade deficits in the future.

Table2: U.S service sector growth (1980-2006), Source: author's calculation

Service category	Surplus/Deficit (bn US dollar)	Share(% of total exports)	Growth(times)
Total Services	80	30	8.5
New economy services	71	12	28

## **Conclusion:**

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Theoretically a dollar depreciation will automatically increase US exports as well as reduce imports and should help narrow the trade deficit, as trade deficit is the difference between these two. However, this mechanism is not so simple for the case of United States because it has a quite big list of international trade partners and a depreciation of its currency can end up a completely different outcome from the theoretical claims. In light of the above policy justification this paper presents a mixed conclusion and the implication of these findings are clear. They suggest that dollar devaluation can reduce U.S trade deficit mainly by stimulating exports, provided that the dollar has been depreciated against every single country's currency of US trade partners, at least the larger ones. Our findings support the view of elasticity optimists but not so overwhelmingly and the findings offer a timid opinion for the diminishing short run elasticities to conform the J-curve effect. The main conclusion of this paper is that a dollar depreciation can reduce U.S trade deficit. It makes a challenge to some recent literatures that are trying to proclaim that there is no association between the devalued dollar exchange rate and the US trade deficit.

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